Prevalence of Depression by Race/Ethnicity: Findings From the National Health and Nutrition Examination Survey III

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Depression prevalence was examined by race/ethnicity in a nationally representative sample. The Diagnostic Interview Schedule was administered to 8449 (response rate=96.1%) participants (aged 15–40 years). Prevalence of major depressive disorder was significantly higher in Whites than in African Americans and Mexican Americans; the opposite pattern was found for dysthymic disorder. Across racial/ethnic groups, poverty was a significant risk factor for major depressive disorder, but significant interactions occurred between race/ethnicity, gender, and education in relation to prevalence of dysthymic disorder. (*Am J Public Health.* 2005;95:998–1000. doi:10.2105/AJPH.2004.047225)

Published data regarding prevalence of depression by race/ethnicity are contradictory. Some studies report higher rates of major depressive disorder in African American compared with White individuals,[1–3] whereas others report lower or equivalent rates in African American individuals.[4–7] Few studies have examined dysthymic disorder by race/ethnicity.[7] The purpose of this study was to examine the prevalence of major depressive disorder and dysthymic disorder in the general United States population by race/ethnicity.

METHODS

Survey Design

The National Health and Nutrition Examination Survey III was conducted from 1988 to 1994 by the National Center for Health Statistics.

Sampling followed a stratified, multistage, probability cluster design from which a representative US sample was obtained. Mexican American and African American individuals were oversampled for more reliable estimates. Respondents (N=8449; 96.1% response rate) aged 15 to 40 years were administered the Diagnostic Interview Schedule,[8] which used criteria from the *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* (*DSM-III-R*).[9] Approximately 3.9% of the respondents had nonvalid or missing Diagnostic Interview Schedule data.

The 2 outcomes were (1) dysthymic disorder: at least 2 years of dysphoric mood ("[have you]. . .felt depressed or sad almost all the time, even if you felt OK sometimes?") plus 2 other symptoms of depression, and (2) major depressive disorder: at least 2 weeks of depressed mood ("[have you]. . .felt sad, blue, depressed, or. . .lost all interest and pleasure in things that you usually cared about or enjoyed?") plus 4 other symptoms.

Statistical Analyses

We used χ^2 and logistic regression analyses (SAS, Version 8 [SAS Institute Inc, Cary, NC], and Stata, Version 7 [Stata Corp, College Station, Tex]) to assess whether racial/ethnic group was associated with prevalence of depression (by type), and we controlled for age, gender, income, education, and marital status. Sampling weights were used to correct for

differential probability of selection and differential response rates by age, gender, and race/ethnicity.

RESULTS

Prevalence of major depressive disorder differed significantly by racial/ethnic group, with the highest prevalence in White participants (Table 1). Mexican American and White individuals had significantly earlier onset of major depressive disorder compared with African American individuals (*P*=.001). Overall, persons living in poverty had nearly 1.5 times the prevalence of major depressive disorder; however, poverty was significantly associated with prevalence of major depressive disorder only for White respondents (*P*=.023). Lack of education (<8 years of school) was significantly associated with prevalence of major depressive disorder *only* for Mexican American individuals (*P*=.000).

In contrast to the comparative rates for major depressive disorder, the prevalence of dysthymic disorder was significantly greater among African American and Mexican American individuals compared with Whites (Table 1). After we controlled for poverty, lack of education remained a significant risk factor for dysthymic disorder. In addition, significant interactions occurred between race/ethnicity, gender, and education in relation to prevalence of dysthymic disorder. Specifically, for White respondents (of both genders), a precipitous decline in prevalence of dysthymic disorder was seen with any education beyond middle school (>8 years of education); however, for Mexican American and African American subjects, the incremental effect of education on the prevalence of dysthymia was less evident and depended on gender (Figure 1).

DISCUSSION

Most previous studies have suggested that African American individuals have lower rates of depression compared with White individuals. These National Health and Nutrition Examination Survey III findings indicate that prevalence of depression differs significantly by race/ethnicity but that comparative

TABLE 1—Lifetime Prevalence and Logistic Odd Ratios (ORs) for Depression, by Type and Risk Category (N = 8449)

Risk Category	Major Depressive Disorder[a]			Dysthymic Disorder[b]		
	Prevalence	Unadjusted OR	Adjusted OR	Prevalence	Unadjusted OR	Adjusted OR
Race/Ethnicity						
White	10.40	1.00	1.00	5.70	1.00	1.00
African American	7.50**	0.61**	0.51**	7.50*	1.27*	0.92
Mexican American	8.00*	0.68**	0.38**	7.40*	1.27*	0.45*
Gender						
Male	6.30	1.00	1.00	7.70**	1.00	1.00
Female	12.60**	2.26**	2.16**	4.50	1.75**	1.70**
Age, y						
15–19	7.50	1.00	1.00	4.70	1.00	1.00
20–24	10.20	1.23	1.25	4.40	1.31	1.72**
25–29	8.30	1.07	1.10	5.70	1.67	1.60**
30–34	9.60	1.23**	1.32	7.70**	1.81**	2.74**
35–40	11.60*	1.43**	1.46	7.80*	1.73**	2.60**
Income						
Above poverty level	9.10	1.00	1.00	4.90	1.00	1.00
Below poverty level	12.80**	1.13	1.23*	12.30**	1.95**	1.56**
Marital status						
Never married	8.70	1.00	1.00	5.60	1.00	1.00
Married living with spouse	8.80	0.99	0.81	5.00	0.98	0.80
Separated, divorced, or widowed	16.90**	2.20**	1.67**	14.50**	2.41**	1.57**
Education, y						
High school graduate	9.70	1.00	1.00	6.30	1.00	1.00
0–8	8.90	0.73*	0.85	12.10	1.43**	1.65**
9–11	9.70	1.01	1.10	8.20	1.37**	1.69**
Some college	9.50	1.17	1.17	3.80	0.76*	0.77*
Total (overall prevalence)	9.50	…	…	6.10	…	…

[a] The best model for major depressive disorder includes race/ethnicity (African American vs White, Mexican American vs White), gender (female vs male), income (below poverty level vs above poverty level), and marital status (married vs single; separated, divorced, or widowed vs single). Note that age and education were not significantly related to major depressive disorder in the combined model.

[b] The best model for dysthymic disorder includes race/ethnicity (African American vs White, Mexican American vs White), gender (female vs male), income (below poverty level vs above poverty level), marital status (married vs single; separated, divorced, or widowed vs single), age, and education.

*$P < .05$; **$P < .01$.

Schedule[8] was used, non–English-speaking persons may have understood questions differently, may have manifested depression differently, or may have been less willing to endorse depression. Differences by race/ethnicity in help seeking, accessing mental health services, and using psychotropic medication also may have contributed. Riolo et al.,[11] in their analyses of National Health and Nutrition Examination Survey III data, found that rates of psychotropic medication treatment differed by racial/ethnic group. Although African American and Mexican American individuals have lower rates of major depressive disorder than do White individuals, they are also less likely to receive medical treatment, which may contribute to more chronic depression.[11,12]

Study limitations include year of data collection and consequent use of *DSM-III-R* diagnostic criteria. However, respondents were asked whether they had taken medication or told a provider about their symptoms; these questions were used to approximate the functional impairment criterion of *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. In addition, accuracy of lifetime diagnoses based on self-report may be affected by recall bias (e.g., results show higher lifetime rates of major depressive disorder among those aged 20–24 vs 25–34 years). Self-report is also limited by patient insight and does not allow for examiner ability to elicit nonverbal signs of depression (e.g., psychomotor retardation). Future research is needed to consider other potentially important factors, such as unemployment, rural residence, and comorbid disorders (e.g., substance use and anxiety disorders). ∎

About the Authors

At the time this research was completed, the authors were with the Department of Psychiatry at the University of Michigan, Ann Arbor.

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rates depend on the *type* of depression. African American and Mexican American individuals have higher lifetime prevalence rates of dysthymic disorder, whereas White individuals have higher lifetime prevalence rates of major depressive disorder.

What is it about being African American or Mexican American in the United States that results in chronic dysphoria? Our findings are partially explained by poverty and lack of education; however, other cultural factors may have a mediating effect. There may be subgroups of Mexican American persons (e.g., immigrants with little education who do not speak English) with a higher prevalence of dysthymic disorder. Past research has shown the importance of immigration status and generational differences (e.g., acculturation).[10] We found that non–English-speaking persons had significantly lower education ($P = .000$). Although the Spanish-language version of the Diagnostic Interview
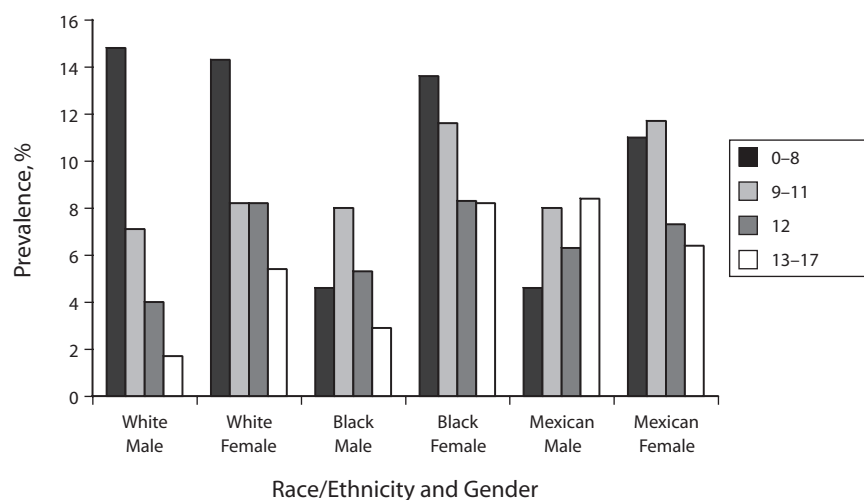
FIGURE 1—Prevalence of dysthymic disorder, by years of education, race/ethnicity, and gender.

Human Participant Protection

This research project was exempt from formal review through the institutional review board at the University of Michigan because it consisted solely of secondary data analysis of a public use database.

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